

User guide for the Maps Unique Fisherman Offshore GPS Mapping System for NC, SC, GA

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Bathymetric Bottom contours

The contour data on Maps Unique is represented as bathymetric contour lines. A bathymetric contour line connects all equal depths along that line at intervals of 2 meters (6.40 feet). At depths greater than 200 meters (642 feet depth), the contour intervals are 32.0 feet. The one map exception in the Maps Unique series is the Beaufort, SC map which has a contour interval of 1 meter (3.2 feet). Bottom sounding data was compiled mostly through hydrographic surveys commissioned by NOAA through the years. On the Maps Unique charts, contour line depth points are reported in feet (not meters) and fathoms for contours greater than 180 feet.

Bathymetric contour lines are important to the fisherman because they give a visual of the lay of the bottom depicting ridges, ledges, depressions, seamounts, bottom outcrops, and the location and direction of ancient terrace escarpments. By knowing these contour features will allow the fisherman to better find productive habitat along with the other information found on the charts.

Special notes on bathymetry:

- The closer the contour intervals are to each other over a given distance, the steeper the slope. Features to note where slope is very prominent are along the shelf break at 165 to 600 ft. (the 25 to 100 fathom break), old terrace ridges paralleling cape regions, along inlets, and live bottom escarpments along the 90 ft. terrace area and the 60 ft. terrace area. Along the 165-600 ft. break, sometimes the slope is so steep that the contour lines will “peter-out” as they are so close to each other indicating steep walls and ledges. Offshore of the break in waters greater than 600 ft., large ridge and valley systems are evident by contours as well as seamount features.
- Closed contours (especially those depicting more closed contours within each other) will represent a rise in elevation off of the seafloor. These areas may be ridge systems and/or associated with live bottom outcrop reef areas.
- A closed contour with internal “hatch-lines” represents an elevation bottom change going downward. These may be depressions, reef sink areas, and lower lying depths between ridges. Sometimes you may see multiple closed hatched contours within each other representing a more pronounced depression area. Such features are sometimes characteristic of live bottom reef areas.

Hardbottom/Livebottom reef areas

Maps Unique has been researching and plotting live bottom reef areas since the 1st map series published in 1988 and updating these with new sites with each updated published map. Live bottom reef areas are predominantly limestone rock areas where the hard substrate is near, at, or above the sea bottom surface. These hard surfaces allow marine growth (sponge/coral) to attach starting the process for the formation of living live bottom reefs which tend to build among themselves through time. These bottoms concentrate bait, and in the case of reefs with substantial structure such as outcrops, ledges, etc., provide the best habitat for the bottom ground fish like the Snapper/Grouper complex and Pelagic migrating game fishes like Kings, Wahoo, and Sailfish. The bait holding to these areas is what keeps the pelagic fishery concentrated on these reef sites.

Live bottoms occur sparingly throughout the south Atlantic from very near-shore (just off the beach in some areas) to off the shelf break into deep water along the 30-100 fathom break.

Most of the concentrations of live bottoms on the shallow shelf region occur along old ancient sea-level terraces and ridge/runnel topography created thousands of years earlier.

Maps Unique has compiled live bottom data from a variety of resources through the years including government studies/research, on site interpretations, and especially from interviews/feed back from fishing clients, including commercial interests through the years. It is the purpose of Maps Unique to plot many numbers to try to provide a graphic/geographic display as to where these areas are located and most concentrated. The original live bottom plots on maps unique are shown as black dot patterns. Data added through the years are shown as green dots (updates to original series). Some of the patterns/observations made by Capt. Chip Berry, the author are summarized below:

- The greatest concentration of live bottoms tend to be associated with 3 major (and a few minor) ancient offshore terraces. These occur along the 60ft. break (50-70 feet depth), the 90 ft. break (80-100 feet depth), and along the major 30-100 fathom shelf break where it rolls off from 165-600 feet of water. These terraces contain a hit and miss scenario of ledges, outcrops, ridge/swale topography, and ridges with exposed limestone bottoms. As the fisherman works these terrace escarpments, one should find scattered bottom features throughout the terrace interface. In fact, most of the good bottoms offshore that have received the common names for good fishing habitat are associated with these 3 major escarpments. There are also minor terrace ridges offshore including the areas in the 45 ft. depth and the areas around 110-120 feet of water. Whenever a fisherman crosses a good drop off along the terrace (usually 10 ft. on the 90 and 7 ft. on the 60), the fisherman should consider looking to the NE and SW to follow and locate other features along the terrace. Note ridge system features, depressions, and live bottom plots to help connect the dots along the terrace. On any given live bottom reef area concentration, expect to find a scattering of ledges, outcrops, table-top ridges and other topographic relief areas. Look for bait fish concentrations to help identify areas of patch and low-relief reef hard bottoms.
- The 25 fathom/100 fathom break is also a very significant terrace coving the east coast. The break is best described as a slope/ledge that drops off to deep water from 165-600 ft. Depending on the area; the slope can drop over a few miles range or drop in a few hundred yards. Places like the Georgetown Hole, The Steeples, and the Big Rock have enormous ledge drops. On other depths along the terrace, the drop seems to be in several ledge segments. The author has noted that one very familiar place, the Winyah Scarp, distinct ledge drops are in the range of 165-180, 180-210, 210-230, 230-260, 260-310, 310-360, and 360 to 600. These individual terraces along the shelf break can be along a course inshore to offshore for about 7-10 miles (look at contours) from the top to bottom of the shelf break.
- Maps Unique describes some of its live bottom plots as low-relief, moderate-relief, and high relief. The user of the maps should probably not get to hung-up on these terms for the following reasons: 1) most reef areas are highly irregular and are irregular in terms of relief and distribution. Most large reef areas will be a hodge-podge of small ledges, outcrops, sand vents, and hard flat bottoms associated with a reef system. Fisherman should work these areas and identify significant structure within the reef. Many of the reefs appear to be oriented in a NE-SW direction or sometimes E-W. Look at live bottom plots and contours for best results. In areas of flatter relief hard grounds, look for bait fish concentrations at or near the bottom. Note that some of the reefs appear as long thin line, sometimes going for miles (original black dot plots). These areas were derived from swath survey data where the research vessel was crossing a live bottom region. These reef

areas should be interpreted as areas that are actually highly irregular with other potential habitat lying on either sides of the actual survey swath.

- On any given reef at anytime, fish may be concentrating on a particular side of the reefs. This seems to be true along ridges and along the shelf break. Currents, thermoclines and other variables affect this.

Artificial Reefs and Wreck sites for NC, SC and GA.

The artificial reef programs for NC, SC, and GA. are excellent programs for providing additional productive hard bottom habitat. All 3 states have both a very dense quantity of very-near shore sites and well as those that extend beyond 100 ft. depth. They have been placed to provide the fishermen from any port a good supply of multiple opportunities, usually between productive naturally occurring hard bottom regions.

Most artificial reefs are roughly a square mile area where quality reef materials are placed. New materials are periodically placed on these for continued enhancement and seem to be the preferred option over the development of new additional reef sites. On Maps Unique, the location of reef sites and wrecks are displayed by the round green symbol and named. The legend shows the GPS coordinates and materials for each structure on each site. These are updated with each map area reprint.

Artificial Reefs contain a variety of material, but old ship vessels, barges, concrete material, bridge rubble, and Reef Balls provide the majority of structure in recent years. Train cars, army tanks, bridge rubble of concrete and steel add up also. The name of the game is to provide a stable hard structure that creates a live-bottom living reef site. Mimicking natural hard bottom habitat, these reef areas are highly productive and contain considerable relief.

GPS coordinates and LORAN coordinates Information for NC, SC, and GA

Each Maps Unique chart has a very detailed Latitude/ longitude grid displayed at 5 minutes of latitude by 5 minutes of longitude. This roughly equals to a 5 mile by a 4 mile grid system at this latitude area.

One minute of latitude (N to S) is exactly one nautical mile. This is 6,076 ft.

Therefore, you can determine distance from the latitude across the chart.

Longitude (E to W) varies with the latitude but is roughly about 4 miles across.

The further you go to the north, the narrower the longitude lines become because they converge at the poles. The latitude lines remain consistent from the N to the S poles. A "full degree" of latitude is equal to 60 nautical miles and /or 60 minutes. Each minute (one mile) on Maps Unique is represented as 1/100th of a minute in all coordinates on all charts (not seconds). If your GPS calls for a 3 digit number at the end, simply add a zero (0) at the end of my 2 digit numbers.

If you are a fisherman with LORAN coordinates still in hand, consider the Maps Unique Andren program (under products). The program will accurately convert LORAN numbers to an ASF corrected Lat/Lon. It also manages numbers, remarks, and other fishing location information and can print custom maps. The Maps Unique databases for each map area can be ordered and it is embedded already in the program.

Sea Surface Temperature and Water Habitats

A variable that is crucial to offshore fishing success is the angler knowing the conditions, location, and distribution of water regimes. This variable cannot be supplied by Maps Unique, but satellite derived data combined with the bottom habitat data of Maps Unique is a powerful tool. Capt. Chip Berry never leaves the hill to bluewater without first consulting his water regime. To better understand this variable, let's discuss the following:

- The Gulf Stream is a river of water that flows up the east coast from the south towards the north. It is a clear, salty body that gets its origination from the combined currents from the Straits of Florida and the Loop Current from the Gulf of Mexico. With this combined flow and with the aid of a spinning earth in the Straits of Florida, the Stream as it flows northwestward near Cape Canaveral, literally spills out into the open south Atlantic basin. From Cape Canaveral to Cape Hatteras, the Stream is a wild and meandering river of blue water.
- The boundaries of the stream with inner-oceanic waters to the western side is what most of us look for to find fish. Basically, the more pronounced the boundary and the longer it's been there is the best for fishing.
- The Stream will often kick-off pockets of water to the NW along the western wall as eddies. Sometime these eddies completely break-off from the stream and drift as isolated pockets well inshore of the stream. Eddies are also found along with other current boundaries in the main axis of the stream. These features are prime boundaries for finding productive habitat.
- Along current and stream boundaries, Sargasso weed lines appear as water is pushed forward. These weed lines usually are oriented N to S or E-W as the stream pushes to the north. Along these boundaries, the angler can expect temperature changes, water clarity changes, salinity changes, and the presence of weed lines. This is ultimate for the creation of a food chain that brings in pelagic species to the feast. The longer this situation persists, the better for concentrating fish. 2 to 3 day interface at the boundary is excellent. So the bottom line is: If you find any break where there is a temperature change, a water color change, a water surface boundary, or the presence of a weed line—these are good places to consider.
- As might be expected, water temperature breaks along the western Gulf Stream boundaries are most pronounced during the fall to spring months, but are less varied during the real warm summer months (July-September). Although less varied, any small change of temperature is still productive water, especially if it's been there for a sufficient time to attract flying fish and other bait fishes.
- Sea Surface Temperature Mapping is found through NOAA's polar-orbiting satellites. This data is collected as satellite passes occur, usually twice a day. This data is uploaded and sometimes enhanced by those that distribute it to fishing related clients. The raw data is calibrated for special accuracy, temperature calibration, and sometimes color enhanced. 2 services recommended by Maps Unique are:
 - Frying Pan Tower (www.fryingpantower.com). Frying Pan offers both a free and a subscription-enhanced sea surface temperature mapping program. The enhanced version combines sea surface temperature, bottom data, weather, and other variables into a complete map application.
 - Roffer's Oceanographic Services (www.roffs.com) provides an excellent fishing and map report analysis that can be e-mailed or faxed to client. Water temperature and other variables, such as time analysis are analyzed and used to generate each report. They are available by seasonal subscription or paid with individual daily order.

Best Regards and Happy Fishing---Capt. Chip Berry
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